

REMARKS

Claims 2-22 are pending. Claim 1 has been cancelled without prejudice or disclaimer.

Claims 10-15 and 20 are found allowable subject to being rewritten in independent form.

OBJECTIONS TO THE CLAIMS

Claims 1-6, 16, 17, 21 and 22 have been objected to because of the informalities listed on page 2 of the Office Action.

With respect to claims 1-5, the Examiner believes that the language “along the movement route of the needle pointer” is unclear.

The Examiner questions “how the needle pointer and the light source can be in the same movement route while the needle pointer is moving.”

It is noted that a decision on whether a claim is invalid requires a determination of whether those skilled in the art would understand what is claimed when the claim is read in light of the specification, *Seattle Box Co. v Industrial Crating & Packing*, 731 F.2d 381, 385, 221 U.S.P.Q. 568, 574 (Fed. Cir. 1984).

It is respectfully submitted that the Examiner does not explain why one having ordinary skill in the art, armed with the supporting specification, would have been confused as to the scope of claims 1-5 when read in light of the disclosure. More specifically, it is not apparent why the language “along the movement route of the needle pointer” is unclear.

For example, claim 2 recites *inter alia*:

-a needle pointer which is attached to the movable body and moves along the indexes around the first through-vision section; and

-a light source for illuminating the needle pointer.

The claim specifies that the light source is formed by a plurality of light sources disposed at certain intervals along the movement route of the needle pointer.

As shown, for example, in FIG. 2 and described in paragraph 0031 of the specification, a needle pointer type meter includes a needle pointer 4 is attached to the rotary (movable) body 3, and light sources L2 for illuminating the needle pointer 4.

As described in paragraph 0032 and shown in FIG. 1, indexes 12 such as characters and graduations are arranged to form a circular arc around the first through-vision section 11 along the movement route of the needle pointer 4.

As described in paragraph 0044, the light sources L2 are formed by light-emitting diodes attached to a common belt-shaped flexible conductor 9 (FIG. 5) such as a flexible print circuit (FPC).

As described in paragraph 0045 (on page 25), the light sources L2 are positioned outside the indexes 12 such that the respective light-emitting portions LF of the light sources L2 face the through-vision section 11 side, and the movement center C of the needle pointer 4 (see FIG. 3).

Accordingly, one skilled in the art, armed with the specification and the drawings, would understand that the claimed light source is formed by a plurality of light sources disposed at certain intervals along the movement route of the needle pointer, as the claims require.

Further, the Examiner contends that the term “light source” in claims 1-5 should read “light source means.”

It is respectfully submitted that this requirement is improper.

The patent law allows an inventor to be his own lexicographer. *Locite Corp. v. Ultraseal Ltd.*, 781 F.2d 861, 228 U.S.P.Q. 90 (Fed. Cir. 1985). He “may define his own terms, regardless of common or technical meaning.... Claim language is not to be interpreted in a vacuum, but is

to be read in light of the specification to determine the meaning intended by the inventors. *Rohm & Haas Co. v. Dawson Chemical Co., Inc.*, 557 F. Supp 739, 217 USPQ 515, 573 (Tex. 1983).

As demonstrated above, the specification provides clear support for the terminology used in the claims.

Further, per the Examiner's request claim 6 has been amended to make it dependent from claim 2, and claims 16 and 17 have been amended to make them dependent from claim 5.

Also, as claim 1 has been cancelled, claims 19, 21 and 22 have been amended to make them dependent from claim 2.

Further, the Examiner questions the language of claims 21 and 22.

In particular, claim 21 recites that the movable body is a gear wheel which is rotated by the drive device.

The Examiner contends that the drive device (rather than the movable body) is a gear wheel.

The Examiner's assertion is respectfully traversed. As shown, for example, in FIG. 2 and disclosed in paragraph 0034, the movable body 3 may have a gear section 32 formed on its outer periphery, and may function as a gear wheel.

Claim 22 recites that the movable body is a belt-shaped body which is moved in the longitudinal direction by the drive device.

The Examiner contends that the drive device (rather than the movable body) is a belt-shaped body.

This assertion is respectfully traversed.

As shown in FIG. 7 and described in paragraph 0058, a belt-shaped body which shifts in the longitudinal direction may be used as a movable (or rotary) body 3. For example, as described in paragraph 0059, a flexible belt B may be used.

It is believed that the claims, as now amended, fully comply with the statutory requirement to set out and circumscribe a subject matter area with a reasonable degree of precision and particularity.

REJECTIONS UNDER 35 U.S.C. 103

Claims 1, 4, 21 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Zech et al. in view of Ohta et al.

Claims 1, 5, 8, 21 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Zech et al. in view of Shi.

Claims 1, 2, 5, 6, 9, 16, 19, 21 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Zech et al. in view of Quigley et al. and further in view of Shi.

Claims 1, 3, 7, 19 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Zech et al. in view of Adelson et al. and further in view of Shi.

Claim 22 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Zech et al. in view of Ohta et al. and further in view of Shino et al.

Independent claims 2-5 have been amended to more clearly define the claimed subject matter over the prior art.

In particular, amended claim 2 recites a needle pointer type meter, comprising:

-an index plate having a first through-vision section and indexes surrounding the first through-vision section;

-a movable body which has a second through-vision section corresponding to the first through-vision section;

-a drive device for moving the movable body;

-a needle pointer which is attached to the movable body and moves along the indexes around the first through-vision section;

-a light source for illuminating the needle pointer; and

-a display device for displaying predetermined information to an observer located in front of the index plate through the first and second through-vision sections, characterized in that:

the light source is formed by a plurality of light sources disposed at certain intervals along the movement route of the needle pointer, and the needle pointer is made of light-transmissive material which receives light from a given light source of the plural light sources in accordance with the movement of the needle pointer so that the needle pointer can emit light, the needle pointer and the light source being optically connected behind the index plate.

Amended claim 3 recites a needle pointer type meter, comprising:

-an index plate having a first through-vision section and indexes surrounding the first through-vision section;

-a movable body which has a second through-vision section corresponding to the first through-vision section;

-a drive device for moving the movable body;

-a needle pointer which is attached to the movable body and moves along the indexes around the first through-vision section;

-a light source for illuminating the needle pointer; and

-a display device for displaying predetermined information to an observer located at a front side of the index plate through the first and second through-vision sections, characterized in that:

the light source is formed by a belt-shaped planar light-emitting body disposed along the movement route of the needle pointer, and the needle pointer is made of light-transmissive material which receives light from a particular light-emitting region of the light source in accordance with the movement of the needle pointer so that the needle pointer can emit light, the needle pointer and the light source are optically connected at a back side of the index plate.

Amended claim 4 recites a needle pointer type meter, comprising:

-an index plate having a first through-vision section and indexes surrounding the first through-vision section;

-a movable body which has a second through-vision section corresponding to the first through-vision section;

-a drive device for moving the movable body;

-a needle pointer which is attached to the movable body and moves along the indexes around the first through-vision section;

-a light source arranged behind the index plate for illuminating the needle pointer; and

-a display device for displaying predetermined information to an observer located in front of the index plate through the first and second through-vision sections, characterized in that:

the light source is formed by a pipe-shaped light-emitting body disposed along the movement route of the needle pointer, and the needle pointer is made of light-transmissive material which receives light from a particular light-emitting region of the light source in

accordance with the movement of the needle pointer so that the needle pointer can emit light, the needle pointer and the light source are optically connected behind the index plate.

Amended claim 5 recites a needle pointer type meter, comprising:

- an index plate having a first through-vision section and indexes surrounding the first through-vision section;

- a movable body which has a second through-vision section corresponding to the first through-vision section;

- a drive device for moving the movable body;

- a needle pointer which is attached to the movable body and moves along the indexes around the first through-vision section;

- illumination means for illuminating the needle pointer; and

- a display device for displaying predetermined information to an observer located at a front side of the index plate through the first and second through-vision sections, characterized in that:

the illumination means is formed by a light transmissive body disposed along the movement route of the needle pointer and a light source for supplying light such that the light transmissive body can emit light, and the needle pointer is made of light-transmissive material which receives light from a particular light-emitting region of the light transmissive body in accordance with the movement of the needle pointer so that the needle pointer can emit light, the needle pointer and the light transmissive body are optically connected at a back side of the index plane.

Accordingly, the claims have been amended to stress that the needle pointer and the light source or the light transmissive body are optically connected behind or at the back side of the

index plate. The claims specify that the display device displays predetermined information to an observer located in front of or at the front side of the index plate.

As demonstrated below, the references of record neither individually nor in combination suggest the arrangements recited in claims 2-5.

In particular, the Examiner takes the position that Zech discloses an index plate, a movable body, a drive device, a light source and a display device.

However, the Examiner admits that Zech does not disclose specific optical arrangements recited in the claims. Quigley, Shi, Andelsson, or Ohta are relied upon for disclosing these arrangements for the respective rejected independent claims.

Considering the references, Zech discloses a "centerless needle pointer type meter" similar to the meter described in the Prior Art section of the present application. However it does not disclose a light source, a light transmissive body and a needle pointer made of a transmissive material.

Moreover, the reference does not teach or suggest that the needle pointer and the light source or the light transmissive body are optically connected behind or at the back side of the index plate, as the claims 2-5 require.

Quigley discloses the plurality of light sources disposed at certain intervals. However the light sources are disposed along the scales on the overlay dial in order to illuminate them, and not disposed along the movement route of the needle pointer.

Further, this prior art document does not show the needle pointer which is made of transmissive material and illuminated by the light sources.

Moreover, the reference does not teach or suggest that the needle pointer and the light source or the light transmissive body are optically connected behind or at the back side of the index plate, as the claims 2-5 require.

Shi also does not teach or suggest that the needle pointer and the light source or the light transmissive body are optically connected behind or at the back side of the index plate, as the claims 2-5 require.

Andelsson discloses a belt-shaped light source comprising a belt-shaped flexible conductor and a plurality of dot-like light source supported on the flexible conductor at certain intervals. The light source illuminates the index disc and does not illuminate the needle pointer.

Hence, the reference does not teach or suggest that the needle pointer and the light source or the light transmissive body are optically connected behind or at the back side of the index plate, as the claims 2-5 require.

Ota discloses a pipe-shaped light source and needle pointer made of transmissive body.

However the needle pointer and the light source are not optically connected behind or at the back side of the index plate.

It is well settled that the test for obviousness is what the combined teachings of the references would have suggested to those having ordinary skill in the art. *Cable Electric Products, Inc. v. Genmark, Inc.*, 770 F.2d 1015, 226 USPQ 881 (Fed. Cir. 1985). In determining whether a case of prima facie obviousness exists, it is necessary to ascertain whether the prior art teachings appear to be sufficient to one of ordinary skill in the art to suggest making the claimed substitution or other modification. *In re Lulu*, 747 F.2d 703, 705, 223 USPQ 1257, 1258 (Fed. Cir. 1984).

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As demonstrated above, the combined teachings of the prior art would not suggest that the needle pointer and the light source or the light transmissive body are optically connected behind or at the back side of the index plate, as the claims 2-5 require.

Accordingly, the prior art teachings are not sufficient to arrive at the claimed inventions.

Therefore, the amendments to claims 2-5 overcome the rejections under 35 U.S.C. 103 applied in the Office Action.

In view of the foregoing, and in summary, claims 2-22 are considered to be in condition for allowance. Favorable reconsideration of this application, as amended, is respectfully requested.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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